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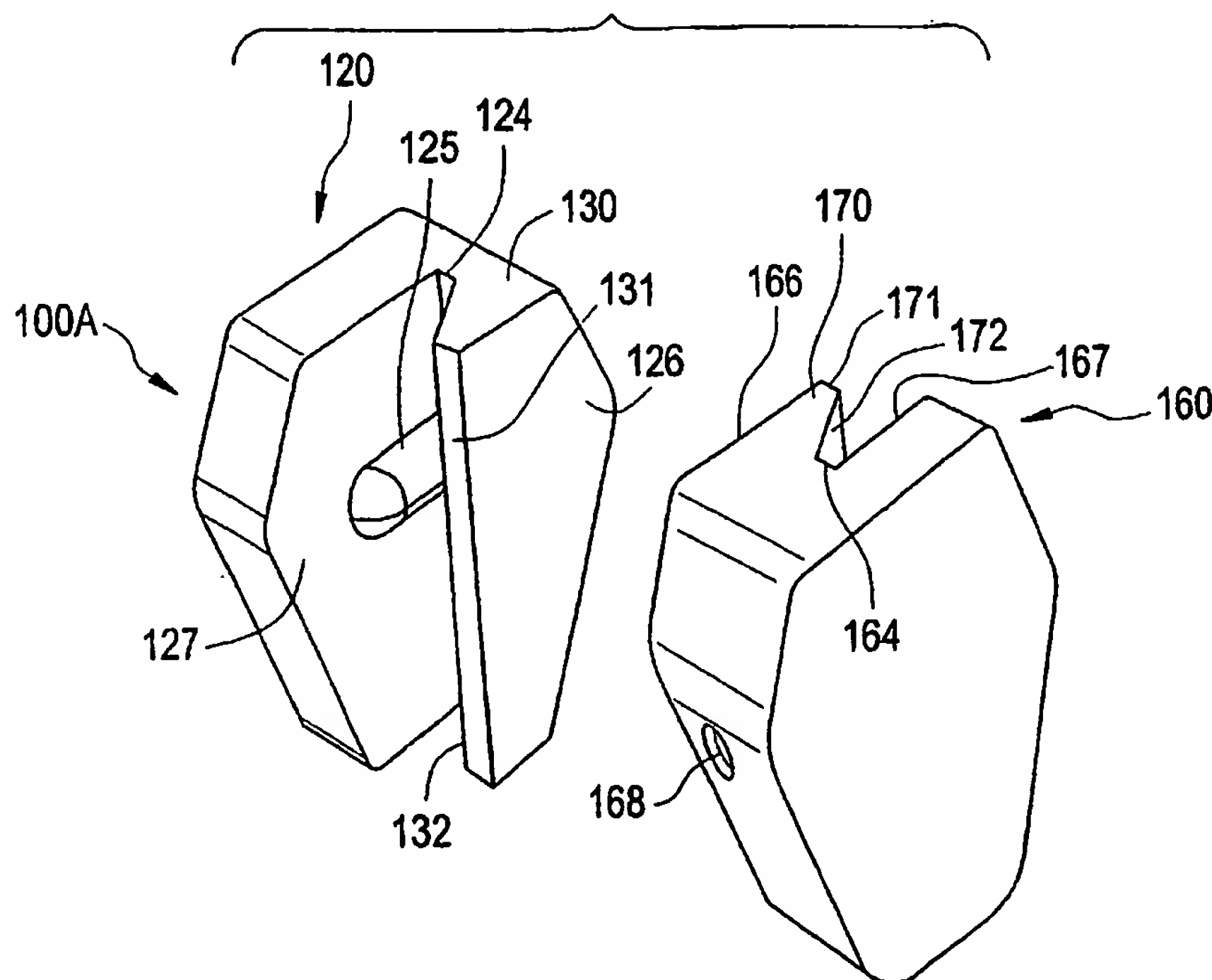
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(57) Abstract: Ion mobility spectrometer. The spectrometer includes an enclosure for receiving a sample therewithin and an electron beam window admits an electron beam into the enclosure to ionize the sample in an ionization region. A shutter grid is spaced apart from the ionization region and means are provided for sample ion preconcentration upstream of the shutter grid. The ion preconcentration is effective to reduce space charge resulting in a lowered threshold detection level.